

## ABSTRACT OF THE DISCLOSURE

A polymer electrolyte fuel cell exhibits an excellent performance with an efficient electrode reaction: by providing a layer containing an electroconductive fine particle between the catalytic reaction layer and the gas diffusion layer in the electrodes; by providing a hydrogen ion diffusion  
5 layer on at least either surface of the catalyst particle or the carrier, which carries the catalyst particle in the catalytic reaction layer; or by constituting the catalytic reaction layer with at least a catalyst comprising a hydrophilic carbon material with catalyst particles carried thereon and a water repellent carbon material.